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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,282	10/31/2003	Se Wan Kim	P24527	8430
7055	7590	10/12/2005	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C.			MARC, MCDIEUNEL	
1950 ROLAND CLARKE PLACE			ART UNIT	
RESTON, VA 20191			PAPER NUMBER	

3661

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,282

Applicant(s)

KIM ET AL.

Examiner

McDieunel Marc

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 11 is/are rejected.
- 7) ☒ Claim(s) 4,9,10 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-12 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5-8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Weber (U.S. Pat. No. **5,491,670 A**).

As per claims 1 and 6, Weber teaches a system and an associated method having a mobile robot using an image sensor (see abstract), comprising: an image capture unit for photographing the bottom surface according to motion of a mobile robot at a certain intervals and capturing images (see abstract, particularly video cameras); a displacement measurer for measuring displacement about the captured image (see video cameras of the abstract in combination with col. 22, lines 53-56); and a microcomputer for outputting an actual moving distance by direction and motion of the mobile robot on the basis of the measured displacement value (besides Weber' s computer, inherently a microcomputer system being used in order to calculate actual distance).

As per claims 2-3, 5, 7-8 and 11, Weber further comprising: a memory for storing images outputted from the image capture unit (see abstract as described above); and a comparator for comparing an image presently outputted from the image capture unit with a previous image stored in the memory (see col. 1, line 56 – to – col. 2, lines -16 , particularly recognize landmarks involves comparison). With respect to claim 7, storing the captured image (see Weber' s computer system). With respect to claim 3, wherein the displacement measurer measures a moving path of pixels of an image of each frame outputted from the comparator (see col. 1, line 56 – to – col. 2, lines -16 , particularly recognize landmarks involves comparing pixels of images). With respect to claim 5, a luminous diode for irradiating light; a light guide for guiding the irradiated light; and an image sensor for capturing an image about the bottom surface by sensing intensity variation of light reflected onto the bottom surface through a light lens according to motion of the mobile robot (see inherently such limitation has been covered into the video camera as noted above). With respect to claim 8, wherein the image is divided into a certain pixels in the image capturing step, each pixel receives light reflected onto the bottom surface according to a material of the bottom surface and is discriminated by black and white brightness (inherently such limitation has been known in the video camera art). With respect to claim 11, wherein a moving distance is measured according to direction of the pixel and magnitude of movement in the image in the displacement measuring step (besides Weber' s computer, inherently a microcomputer system being used in order to calculate actual distance as noted above).

Allowable Subject Matter

4. Claims 4, 9-10 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fail to teach or fairly suggest with respect to claim 4, wherein the image capture unit captures an image of the bottom surface having 18×18 pixel and 64-degrees brightness by 1500 frames per second. With claim 8, wherein the image is captured by 1500 frames per second so as to have 18×18 pixels and 64-degrees brightness. With respect to claim 10, wherein the actual moving distance is calculated by dividing a pixel moving distance by a certain time, more preferable, $\{ \text{fraction } (1/1500) \}$ sec. With respect to claim 12, wherein it is judged the mobile robot is not moved, when each captured image is the same in comparison, it is judged the mobile robot is moved, when each captured image is not the same in comparison in the displacement measuring step.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to McDieunel Marc whose telephone number is (571) 272-6964. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

m. marc
McDieunel Marc

Monday, October 10, 2005

MM/